UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,777	10/13/2000	Mukesh Patel	032481-021	1065

8791   7590   12/01/2003

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EXAMINER
DAS, CHAMELI

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.		Applicant(s)	
Office Action Summary		09/687,777		PATEL, MUKESH	
		Examiner		Art Unit	
		C.DAS		2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *13 October 2000* .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *43-45,50-59,63 and 101-108* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *43-45,50-59,63 and 101-108* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

1.   This action is in response to the election/restriction filed on 9/18/03.2.

2.   Group IV (claims 43-45, 50-59, 63, 101-108) has been elected.

3.   Claims 1-9, 16-26, 27-34, 37-42, 46-49, 60, 61-62, 64, 66-86, 87-94, and 95-97 have

been canceled.

Double Patenting

4.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public
policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right
to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11
F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van
Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and,
In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
            A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome
an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting
application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).
            Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer.
A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Instant claim 43, 50, 52, 54, 56, 58, 63 and 101 are rejected under the judicially created

doctrine of obviousness-type double patenting as being unpatentable over claims 1, 33, 36, 39,

69 and 70 of U.S. Patent number 6,332,215.

Although the conflicting claims are not identical, but they are not patentably distinct from each

other because they are obvious variation of each other.

Specification

6.   The disclosure is objected to because of the following informalities:

In the specification, the trademark term "JAVA" was not used as proper trademark

symbol such as "JAVA" or Java ^{TM} in every instance in the application as required under

M.P.E.P. 608.01 (v). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The specification shall conclude with one or more claims particularly pointing out and distinctly

claiming the subject matter which the applicant regards as his invention.

7.   Claims 43, 50, 52, 57, 102, 104 and 107 are rejected under 35 U.S.C. 112, second

paragraph, because claims 43, 50, 52, 57, 102, 104 and 107 contains the trademark term "Java".

See Ex parte Simpson, 218 USPQ 1020 (Bd App. 1982).   The claim scope is uncertain since the

trademark or trade name cannot be used properly to identify any particular material or product.

Claim Objections

8.   Claims 106-108 are objected to because of the following informalities: Claim 106 cannot

be depend on claims 64, 66, 69, 71, 72-73, 76, 80, 81, 83, 84, 86, 95 and 98 because claims 64 -

100 have been canceled. The Examiner interprets that claim 106 depends on claim 101.

Similarly, claim 107 cannot be depend on claims 65. The Examiner interprets that claim

107 depends on claim 101.

Similarly, claim 108 cannot be depend on claims 65. The Examiner interprets that claim

108 depends on claim 101.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or
described as set forth in section 102 of this title, if the differences between the subject matter
sought to be patented and the prior art are such that the subject matter as a whole would have

been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 43-45 and 50-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickol et al, US 5,875,336 and further in view of Krall et al, the article XP-002117590, Title: CACAO- a 64 bit JAVA VM just-in-time compiler, Source: Concurrency: Practice and Experience, vol 9 (11), page 1017-1030, November, 1997.

As per claim 43, Dickol discloses:

- a central processing unit with associated register file (Abstract, Fig 2, Fig 3, col 4 lines 55-60)

- a hardware operably connected to the central processing unit, the hardware adapted to convert stack based instruction into register based instruction native to the central processing unit (Abstract, col 3 lines 20-35)

- where hardware marks the variables in the native CPU register file as modified when updated by the execution of JAVA byte codes (col 3 lines 40-50, col 4 lines 10-15, col 4 lines 43-50).

Dickol does not specifically disclose that the hardware processor is an accelerator. However, in the article Krall discloses that the processor is an accelerator (Krall, page 1017, summary and introduction). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the teaching of Krall into the method of Dickol for introducing an accelerator. The modification would be obvious because one of the ordinary skill in the art would be motivated to compile, execute and run the programs faster than the regular hardware processor.

*As per claim 44, Dickol do*es not specifically disclose hardware accelerator copies the

variables as claimed. However, Krall discloses hardware accelerator copies the variables as

claimed (Krall, page 1023, lines 1-24). The modification would be obvious because one of the

ordinary skill in the art would be motivated to duplicate information and reproduce it in another

part of a document, in a different file or memory location.

As per claim 45, Dickol discloses that the hardware are part of the CPU, (Dickol,

Abstract). Krall discloses that the hardware is the accelerator (Krall, abstract and summary).

As per claim 50, Dickol discloses the JAVA instruction "GOTO" (Dickol, Fig 5, col 6 line 2).

For the rest of the limitations see the rejection of claim 43 above.

Regarding claim 51, 53, 55, 57 (Dickol, Abstract).

Regarding claim 52, (Dickol, col 4 lines 43-50, col 6 lines 2). For the rest of the

limitations see the rejection of claim 43 above.

Regarding claim 54 (Dickol, col 5 lines 11-30). For the rest of the limitations see the

rejection of claim 43 above.

Regarding claim 56, (Dickol, col 5 lines 11-30). For the rest of the limitations see the

rejection of claim 43 above.

10.   Claims 58 - 59, 63, 101-108 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Dickol, US 5,875,336 further in view of the article "CACAO- A 64 bit Java VM just-in-

time compiler" XP –002117590, by Krall, published on 1997 and Tremblay et al (US

6,076,141).

Regarding claim 58, neither Dickol nor Krall disclose that generating an increment value

based on the number of bytecdodes... at the same time. However, Tremblay discloses that

generating an increment value based on the number of bytecdodes... at the same time (Tremblay, col 27 lines 20-40). The modification would be obvious because one of the ordinary skill in the art would be motivated to execute the instructions efficiently. For the rest of the limitations see the rejection of claim 43 above.

For claim 59, see the rejection of claim 51 above.

Regarding claim 63, Dickol discloses:

- a first unit adapted to execute register-based instruction (Abstract, col 3 lines 6-10, col 8 lines 53-55)

- a hardware unit associated with the first unit, the hardware unit adapted to decode stack-based instructions (Abstract, col 2 lines 32-45)

- store operands for stack based instructions in the first units register file .. register file (col 4 lines 43-60)

- hardware unit causing execution of the stack based instructions by the first unit's execution unit (col 3 lines 41-55, col 4 lines 43-50).

Dickol does not specifically disclose an underflow or overflow indication. *However, Tremblay discloses a*n underflow or overflow indication (Tremblay, col 19 lines 54-67 and col 20 lines 10-25). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the teaching of Trembly into the method of Dickol for having indication of an underflow or overflow. The modification would be obvious because one of the ordinary skill in the art would be motivated to manage the space in the stack efficiently.

Regarding claim 101, Dickol discloses: stack based instructions executed are branch instruction (col 3 lines 57-62, col 5 lines 65-67).   Dickol does not disclose stack based instructions cause an exception. However, Krall discloses that stack based instructions cause an exception (page 1027, lines 1-10). The modification would be obvious because one of the ordinary skill in the art would be motivated to handle the situation in problem or change in conditions that causes the processor to stop what is doing. For the rest of the limitations see the rejection of claim 63.

Regarding claim 102, (Dickol, col 5 lines 55-60).

Regarding claim 103, (Dickol col 6 lines 47-51).

Regarding claim 104, (Dickol, col 6 lines 1-21).

Regarding claim 105, Dickol discloses: wherein the branch instructions for JAVA byte codes includes at least ... dcmpg (Dickol, col 5 lines 65-67 and col 6 lines 1-5). Regarding claim 106, (Dickol, col 5 lines 13-20).

Regarding claim 107, (Dickol, col 5 lines 13-20).

Regarding claim 108, (Dickol, Abstract).

Conclusion

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339. The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 3:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be

reached at 703-305-4552. The fax number for this group is 703-872-9206. An inquiry of

general nature or relating to the status of this application or proceeding should be directed to the

group receptionist whose telephone number is 703-305-9600.

Chameli C. Das

Chameli C. Das

Primary Patent Examiner

Art Unit: 2122

11/23/03